

Title (en)

DEVICES AND METHODS FOR LEAD ACID BATTERIES

Title (de)

VORRICHTUNGEN UND VERFAHREN FÜR BLEISÄUREBATTERIEN

Title (fr)

DISPOSITIFS ET PROCÉDÉS POUR DES ACCUMULATEURS AU PLOMB-ACIDE

Publication

**EP 2329549 A1 20110608 (EN)**

Application

**EP 09807003 A 20090429**

Priority

- US 2009042122 W 20090429
- US 8891108 P 20080814

Abstract (en)

[origin: WO2010019291A1] A bipolar lead acid battery comprises a compression resistant separator in which the electrolyte is retained in a gelled form, and wherein quasi-bipolar electrodes are maintained in a cell stack under pressure. Most preferably, the negative active material further includes a compression resistant spacer structure and the battery is configured as a VR-BLAB where each single cell can independently vent gases during the charge cycle.

IPC 8 full level

**H01M 2/16** (2006.01); **H01M 50/431** (2021.01)

CPC (source: EP KR US)

**H01B 1/02** (2013.01 - KR); **H01M 10/10** (2013.01 - KR); **H01M 10/12** (2013.01 - KR); **H01M 10/121** (2013.01 - EP US); **H01M 10/127** (2013.01 - EP US); **H01M 10/18** (2013.01 - EP US); **H01M 50/431** (2021.01 - KR); **H01M 50/489** (2021.01 - KR); **H01M 50/431** (2021.01 - EP US); **H01M 50/44** (2021.01 - EP US); **H01M 2300/0085** (2013.01 - EP US); **Y02E 60/10** (2013.01 - EP KR); **Y02P 70/50** (2015.11 - EP); **Y02T 10/70** (2013.01 - US); **Y10T 29/49108** (2015.01 - EP US)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

**WO 2010019291 A1 20100218**; BR PI0917697 A2 20170711; CN 102165629 A 20110824; EP 2329549 A1 20110608; EP 2329549 A4 20120201; EP 2329549 B1 20140521; ES 2480415 T3 20140728; JP 2011530800 A 20111222; KR 20110052705 A 20110518; MX 2011001606 A 20120228; PL 2329549 T3 20150630; RU 2011108944 A 20120920; US 2011305927 A1 20111215

DOCDB simple family (application)

**US 2009042122 W 20090429**; BR PI0917697 A 20090429; CN 200980137904 A 20090429; EP 09807003 A 20090429; ES 09807003 T 20090429; JP 2011523009 A 20090429; KR 20117005718 A 20090429; MX 2011001606 A 20090429; PL 09807003 T 20090429; RU 2011108944 A 20090429; US 200913057438 A 20090429